

Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-21 (Canceled).

22. (Currently amended) A method for portion cutting a food item, comprising the steps of:

scanning at least one of a shape, a structure and/or a dimension of the food item at a first cutting stage by a measuring means;

determining, using a processor, a portion-cutting profile in connection with said scanning at the first cutting stage;

cutting the food item into strips at the first cutting stage in accordance with said portion-cutting profile;

transporting said strips from said first cutting stage to a second cutting stage; and

~~cutting the strips into substantially quadratic rectangular pieces of predetermined weight and/or dimension at [[a]] said second cutting stage on the basis of additional scanning of at least one of a shape, a structure and/or a dimension of the strips at the second stage, said second cutting stage cutting said strips at a direction substantially perpendicular to the cutting performed at the first stage;~~

wherein said step of determining a portion-cutting profile at the first cutting stage comprises determining, ~~in consideration of waste minimization,~~ a predetermined dimensions and/or weights for the cutting-up of said food item into said strips and for the cutting-up of said strips into said substantially quadrati~~e~~ rectangular pieces, on the basis of said at least one of a shape, a structure and/or a dimension of said food item scanned at the first cutting stage and on the basis of said predetermined weight and/or dimensions; and

~~wherein said second cutting stage comprises two or more cutting devices having substantially parallel feeding directions.~~

23. (Original) A method for portion cutting a food item as set forth in claim 22, whereby said determining said portion-cutting profile comprises the step of planning the whole of a cutting sequence.

24. (Original) A method for portion cutting a food item as set forth in claim 22, whereby at least a part of said portion-cutting profile is carried out in said first cutting stage.

25. (Cancelled)

26. (currently amended) A method for portion cutting a food item as set forth in claim 22, wherein other scanning of the shape, structure and/or dimension of the strips is performed in at least one of ~~in the~~ two or more cutting

devices comprised in-~~of~~ the second cutting stage.

27. (currently amended) A method for portion cutting a food item as set forth in claim 22, wherein a feeding direction of ~~said~~ two or more cutting devices of the second cutting stage is different from that of a first cutting device provided in said first cutting stage.

28. (currently amended) A method for portion cutting a food item as set forth in claim 22, wherein at least a part of said portion-cutting profile is communicated further to ~~one or more of the two or more cutting devices of the~~ second cutting stage.

29. (Cancelled)

30. (currently amended) A method for portion cutting a food item as set forth in claim 22, wherein a feeding direction for ~~the~~ two or more cutting devices of the second cutting stage lies substantially at right-angles to a feeding direction for a first cutting device provided in the first cutting stage.

31. (currently amended) A method for portion cutting a food item as set forth in claim 22, further comprising the step of manually placing the food item in a first cutting device provided in the first cutting stage and/or manually transferring the strips to at least one of one or more ~~of~~ ~~the two or more~~ cutting devices ~~of~~ comprised in the second cutting stage.

32. (currently amended) A method for portion cutting a

food item as set forth in claim 22, further comprising the step of non-manually placing the food item in a first cutting device provided in the first cutting stage and/or non-manually transferring the strips to at least one of one or more ~~of the two or more~~ cutting devices provided in ~~of~~ the second cutting stage device.

Claim 33 (Canceled).

34. (Previously presented) An apparatus for portion cutting a food item as set forth in claim 41, wherein said processor is arranged to plan the whole of a cutting sequence, and thereby establish said portion-cutting profile.

35. (currently amended) An apparatus for portion cutting a food item as set forth in claim 41, wherein said first cutting device stage is adapted to carry out at least a part of said portion-cutting profile.

36. (currently amended) An apparatus for portion cutting a food item as set forth in claim 41, wherein further measuring means are arranged in each of said two or more additional cutting devices, each one second cutting stage for scanning at least one of a shape, a structure and/or a dimension of a subset of said strips.

37. (currently amended) An apparatus for portion cutting a food item as set forth in claim 41, wherein the processor is arranged to send at least a part of the portion cutting profile further to the one or more additional cutting devices second cutting stage.

38. (currently amended) An apparatus for portion cutting a food item as set forth in claim 41, ~~which further comprises transfer means wherein said transporter is a conveyor~~ for transferring one or more of the strips from the first cutting device stage to at least one of the one or more additional cutting devices second cutting stage.

39. (currently amended) An apparatus for portion cutting a food item as set forth in claim 41, which further comprises placing means for placing the food item in the first cutting device stage.

40. (currently amended) An apparatus for portion cutting a food item as set forth in claim [[41]] 48, wherein a feeding directions of the one ~~two~~ or more additional cutting devices ~~provided in said second cutting stage is~~ are different from that of [[a]] the first cutting device ~~provided in said first cutting stage~~.

41. (Currently amended): An apparatus for portion cutting a food item into pieces of substantially rectangular shape, comprising:

a first cutting device including first measuring means for scanning at least one of a shape, a structure and/or a dimension of the food item ~~at a first cutting stage~~;

a processor for determining a portion-cutting profile in connection with said scanning;

a first cutting unit included in said first cutting device ~~first cutting stage~~ for cutting the food

item into strips in accordance with said portion-cutting profile;

a transporter for transporting said strips to one or more additional cutting devices; and

said one or more additional cutting devices, each comprising further measuring means for scanning at least one of a shape, a structure and/or a dimension of the strips and a cutting unit at a second cutting stage for cutting the strips into substantially rectangular quadratic pieces of predetermined weight and/or dimension, said second cutting stage cutting said strips at a direction substantially perpendicular to the cutting performed at the first cutting stage;

wherein said processor is adapted to determine said portion-cutting profile comprises determined in consideration of waste minimization and predetermined dimensions and/or weights for the cutting-up of said food item into said strips and for the cutting-up of said strips into said substantially quadratic rectangular pieces, on the basis of said at least one of a shape, a structure and/or a dimension of said food item;

wherein said second cutting stage comprises two or more cutting devices having substantially parallel feeding directions.

42. (Cancelled).

43. (Currently amended) A method for portion cutting a food item, comprising the steps of:

determining at least one physical attribute of the food item using a first measuring device;

determining, using a processor, a portion-cutting profile utilizing said at least one physical attribute of the food and a desired physical attribute;

first cutting the food item into strips at the first cutting stage by cutting in a first cutting direction, said cutting performed in accordance with said portion-cutting profile;

transporting at least a portion of said strips to a second cutting stage;

after said transporting, determining at least one physical attribute of the at least a portion of the strips using a second measuring device; and

utilizing said at least one physical attribute of the at least a portion of the strips for second cutting said at least a portion of said strips into substantially quadrat~~e~~ rectangular pieces of the predetermined physical attribute at [[a]] said second cutting stage by cutting in a second cutting direction, said second cutting direction being substantially perpendicular to said first cutting direction;

~~wherein said second cutting stage comprises two or more cutting devices having substantially parallel feeding directions.~~

44. (Previously presented) The method of claim 43, wherein said second cutting is performed at the second

stage also in accordance with said portion-cutting profile and said portion cutting profile is determined in advance of both said first cutting and said second cutting.

45. (new) The method of claim 43, wherein said second cutting direction is substantially perpendicular to said first cutting direction.

46. (new) The method of claim 43, wherein said transporting includes changing a direction of travel of said strips.

47. (new) The apparatus of claim 41, wherein said transporter is adapted to change a direction of travel of said strips.

48. (new) the apparatus of claim 41, wherein said one or more additional cutting devices have substantially parallel feeding directions arranged such that each cutting stage cuts a different subset of said strips into pieces.

49. (new) The apparatus of claim 41, wherein said additional second cutting devices have substantially parallel feeding directions that are perpendicular to the feeding direction of the first cutting device.

50. (new) The method of claim 22, wherein said transporting includes changing a direction of travel of said strips.